Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Previously presented) An imaging agent which comprises a synthetic caspase-3 inhibitor labelled with an imaging moiety, wherein following administration of said labelled caspase-3 inhibitor to the mammalian body *in vivo*, the imaging moiety is suitable for imaging using SPECT or PET and said imaging moiety is chosen from:

   (a) a radioactive metal ion chosen from ^{99m}Tc, ^{111}In, ^{64}Cu, ^{67}Cu, ^{67}Ga or ^{68}Ga;

   (b) a gamma-emitting radioactive halogen which is ^{123}I;

   (c) a positron-emitting radioactive non-metal chosen from ^{18}F, ^{11}C, ^{124}I or ^{13}N;

   wherein the synthetic caspase-3 inhibitor has a K_i for caspase-3 of less than 500 nM and comprises one or more of the caspase-3 inhibitors defined in (i) to (iii):

   (i) a tetrapeptide derivative of Formula III

   Z^1-Asp-Xaa1-Xaa2-Asp-X^1 (III)

   where Z^1 is a metabolism inhibiting group attached to the N-terminus of the tetrapeptide;

   Xaa1 and Xaa2 are independently any amino acid;

   X^1 is an -R^1 or –CH_2OR^2 group attached to the carboxy terminus of the tetrapeptide;

   where R^1 is H, -CH_2F, -CH_2Cl, $C_{1\text{-}5}$ alkyl ,$C_{1\text{-}5}$ alkoxy or –$(CH_2)_qAr^1$, where q is an integer of value 1 to 6 and Ar^1 is $C_{6\text{-}12}$ aryl, $C_{5\text{-}12}$ alkyl-aryl, $C_{5\text{-}12}$ fluoro-substituted aryl, or $C_{3\text{-}12}$ heteroaryl;

   R^2 is $C_{1\text{-}5}$ alkyl, $C_{1\text{-}10}$ acyl or Ar^1;

   (ii) a 2-oxindole sulfonamide;

   (iii) a dipeptide of Formula VI:

   Z^1-Val-Asp-CH_2-S-R^1 (VI)

where the $-CH_2SR^1$ group is attached to the carboxy terminus of the dipeptides, and Z^1 and R^1 are as defined for Formula (III).

2. (Cancelled)

3. (Previously presented) The imaging agent of Claim 1, where the synthetic caspase-3 inhibitor has a molecular weight of 150 to 3000 Daltons.

4. – 13. (Cancelled)

14. (Previously presented) The imaging agent of Claim 1, where the synthetic caspase-3 inhibitor is selective for caspase-3 over caspase-1, by a factor of at least 50.

15. (Cancelled).

16. (Cancelled).

17. (Previously presented) A radiopharmaceutical composition which comprises the imaging agent of Claim 1, together with a biocompatible carrier, in a form suitable for mammalian administration.

18. (Original) The radiopharmaceutical composition of claim 17, where the imaging moiety comprises a positron-emitting radioactive non-metal or a gamma-emitting radioactive halogen.

19. – 25. (Cancelled).

26. (Currently amended) A kit for the preparation of the radiopharmaceutical composition of Claim 18, which comprises a precursor <u>in sterile, apyrogenic form</u>, said precursor being a non-radioactive derivative of a caspase-3 inhibitor, wherein the caspase-3 inhibitor is as

defined in claim 1, wherein said non-radioactive derivative is capable of reaction with a source of the positron-emitting radioactive non-metal or gamma-emitting radioactive halogen to give the desired radiopharmaceutical, and said non-radioactive derivative is chosen from:

a an organometallic derivative such as a trialkylstannane or a trialkylsilane;

b a derivative containing an alkyl halide, alkyl tosylate or alkyl mesylate for nucleophilic substitution;

c a derivative containing an aromatic ring activated towards nucleophilic or electrophilic substitution;

d a derivative containing a functional group which undergoes facile alkylation;

e a derivative which alkylates thiol-containing compounds to give a thioether-containing product.

27. (Cancelled)

28. (Previously presented) The kit of Claim 26, where the source of the positron-emitting radioactive non-metal or gamma-emitting radioactive halogen is chosen from:

a halide ion or F^+ or I^+; or

b an alkylating agent chosen from an alkyl or fluoroalkyl halide, tosylate, triflate or mesylate;

29. (Cancelled).

30. (Previously presented) The kit of claim 26, where the precursor is bound to a solid phase.

31. (Previously presented) A method of diagnosis of a caspase-3 implicated disease state of the mammalian body, wherein said mammal is previously administered with the radiopharmaceutical composition of claim 17 which comprises imaging said mammal using SPECT or PET.